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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,091	02/04/2004	Kwan-Hee Lee	P56964	1955

7590 07/28/2006

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EXAMINER	
ROY, SIKHA	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 07/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/771,091	LEE ET AL.	
	Examiner	Art Unit	
	Sikha Roy	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *1-14 and 18-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *0204,0805*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Species II, claims 15-17 in the reply filed on July 13, 2006 is acknowledged. The traversal is on the ground(s) that 'examination of reasonable number of species can be done without serious burden'. This is not found persuasive because in the instant application the election/restriction is based on the presence of three different inventions: each method of fabricating the first and second anode in an organic electroluminescent display as claimed in each Species is independent and patentably distinct from the others. Thus the serious burden on the Examiner of having to search all different limitations regarding different inventions and rejecting each invention using different references is eliminated by the proper election of invention requirement. When searching only the elected Species there will not be a need to search for features not stated in the claimed invention, thus resulting a reduction of workload and a simplification of the prosecution of the application.

Accordingly the Species requirement is still deemed proper and is therefore made FINAL.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The abstract of the disclosure is objected to because of use of legal phraseology often used in patent claims such as 'comprises'. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 15 -17 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2349979 to Burroughes et al. and in view of U.S. Patent 6,737,800 to Winters et al.

Regarding claim 15 Burroughes discloses (Fig. 3 page 6 paragraphs 2,3 page 10 paragraphs 3,4) a method of fabricating an organic electroluminescent display comprising the steps of disposing sequentially a first anode material (reflective metallic layer 12) and a second anode material (ITO layer) 13 of pixels 20 on a substrate 10, masking and etching the first and second anode materials to isolate and form anode electrodes of different pixels, each including first anode electrode 12 and second anode electrode 13, disposing organic thin film layers 14,15 patterned on the second anode electrode and then disposing cathode electrode 16 over the entire surface of the substrate.

Regarding claim 15 Burroughes discloses (page 4 last paragraph) light emitting region suitably comprising one or more individual organic materials, suitably polymers or conjugated polymers. Burroughes does not exemplify red, green and blue unit pixels and the second anode of at least one pixel having a thickness different from the thickness of the second anodes of other unit pixels of red, green and blue pixels.

Winters in same field of endeavor discloses (Figs. 1 and 3 column 3 lines 40 through column 4 line 6, column 4 lines 19-34, column 17 lines 4-12, column 18 lines 17-61) method of forming organic electroluminescent display having pixels of red, green and blue (three primary colors) comprises forming first anode electrodes (reflective layer)102 and second anode electrodes (first transparent electrode) 112, disposing respective organic thin film layers and disposing a cathode electrode on the entire surface of the substrate. Winters further discloses the thickness of the second anode electrode 112a in one pixel (red pixel) is different from the thicknesses of the second anodes 112b, 112c of other unit pixels of green and blue and are formed by well known photolithography and etching processes. Winter teaches (column 18 lines 50-65) the thicknesses of second anode electrodes for different pixels are varied so that reflected components of light emitted from a particular colored pixel constructively interfere with non-reflected component and thus enhance the emission efficiency.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include red, green and blue unit pixels of three primary colors and thickness of second anode of one unit pixel of one color different from that of other unit pixels as taught by Winters in the method of forming organic electroluminescent display

of Burroughes for providing a multicolor display and the benefit of reflected components of light of a particular color emitted from one colored pixel constructively interfere with non-reflected component and thus enhance the emission efficiency.

Regarding claim 2 Winters discloses (Fig. 3) the second film of 112a of red unit pixel is thicker than the other unit pixels.

Regarding claim 3, Burroughes and Winters disclose the claimed invention except for the limitation of the thickness of second film of red pixel in the range of 250 to 450°A and 700 to 750 °A, thickness of second film of green unit pixel is in the range of 50 to 150°A and 200 to 300 °A and thickness of the second film of blue unit pixel is in the range of 50-150°A. It is noted that Winters discloses (column 16 lines 35,36,55,56, column 17 lines 4-12) that depending on the wavelength λ of light (color) emitted from a pixel having a particular second film (with a refractive index), thickness differs according to the equations 1 and 2 and an optimum thickness can be calculated and separately adjusted for different color unit pixels. Furthermore it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the ranges of thicknesses of second anodes of red, green and blue pixels as claimed, since optimization of workable ranges is considered within the skill of the art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 5,554,911 to Nakayama et al., U.S. Patent 6,853,132 to Maeda and U.S. Patent 6,639,250 to Shimoda disclose organic EL display having red, green and blue unit pixels including different thicknesses of anode. JP 10-308285 to Takahata et al. discloses different range of thicknesses of second and first anodes in an organic EL display.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sikha Roy

Sikha Roy
Patent Examiner
Art Unit 2879